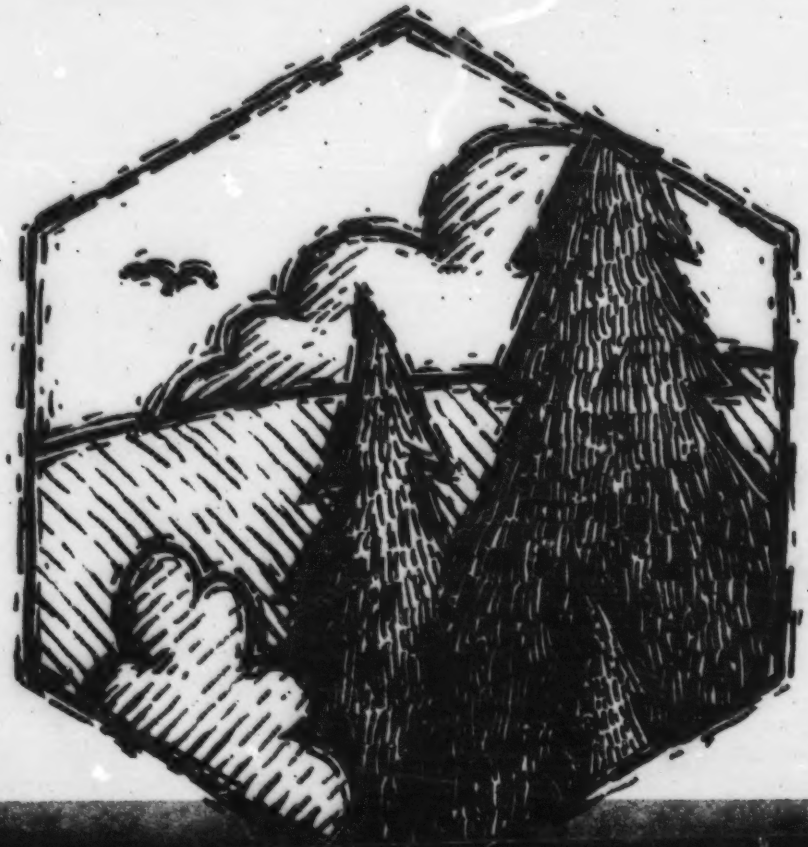
NOTIKEWIN

PROVINCIAL PARK

Management Plan



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November 20, 2001

Errata – November 20, 2001

Government department names have changed since this management plan was signed. The changes are as follows:

Old Name	New Name
Natural Resources Service, Alberta Environment	Parks and Protected Areas, Alberta Community Development Fish and Wildlife Division, Alberta Sustainable Resource Development
Land and Forest Service, Alberta Environment	Forest Protection Division, Alberta Sustainable Resource Development Forest Management Division, Alberta Sustainable Resource Development
Public Lands, Alberta Agriculture, Food and Rural Development	Public Lands Division, Alberta Sustainable Resource Development

Approval Statement

The Notikewin Provincial Park Management Plan is the official plan of Alberta Environmental Protection, Natural Resources Service.

The Plan is a commitment by the Northwest Boreal Region to the protection and management of resources in Notikewin Provincial Park and the provision of recreation opportunities within it.

Pat Long, Regional Director
Natural Resources Service
Northwest Boreal Region

Date Nov 3/00.

This plan is consistent with the provisions of the Provincial Parks Act and Regulations and with provincial policies, priorities and direction.

Morley Barrett,
Assistant Deputy Minister
Alberta Environmental Protection

Date May 25/2001

Acknowledgements

The Notikewin Provincial Park Management Plan is recommended for approval and implementation.

Ron Millson, Area Manager
Natural Resources Service
Peace River Area

Date Nov 3/00

Leslie Sullivan, Conservation Officer
Natural Resources Service
Peace River Area

Date Dec. 10/00

Thank you to those who reviewed the draft management plan, and to those members of the public who participated in its preparation by filling out the survey and attending the open house. Your interest and support for the park is appreciated.

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NOTIKEWIN PROVINCIAL PARK

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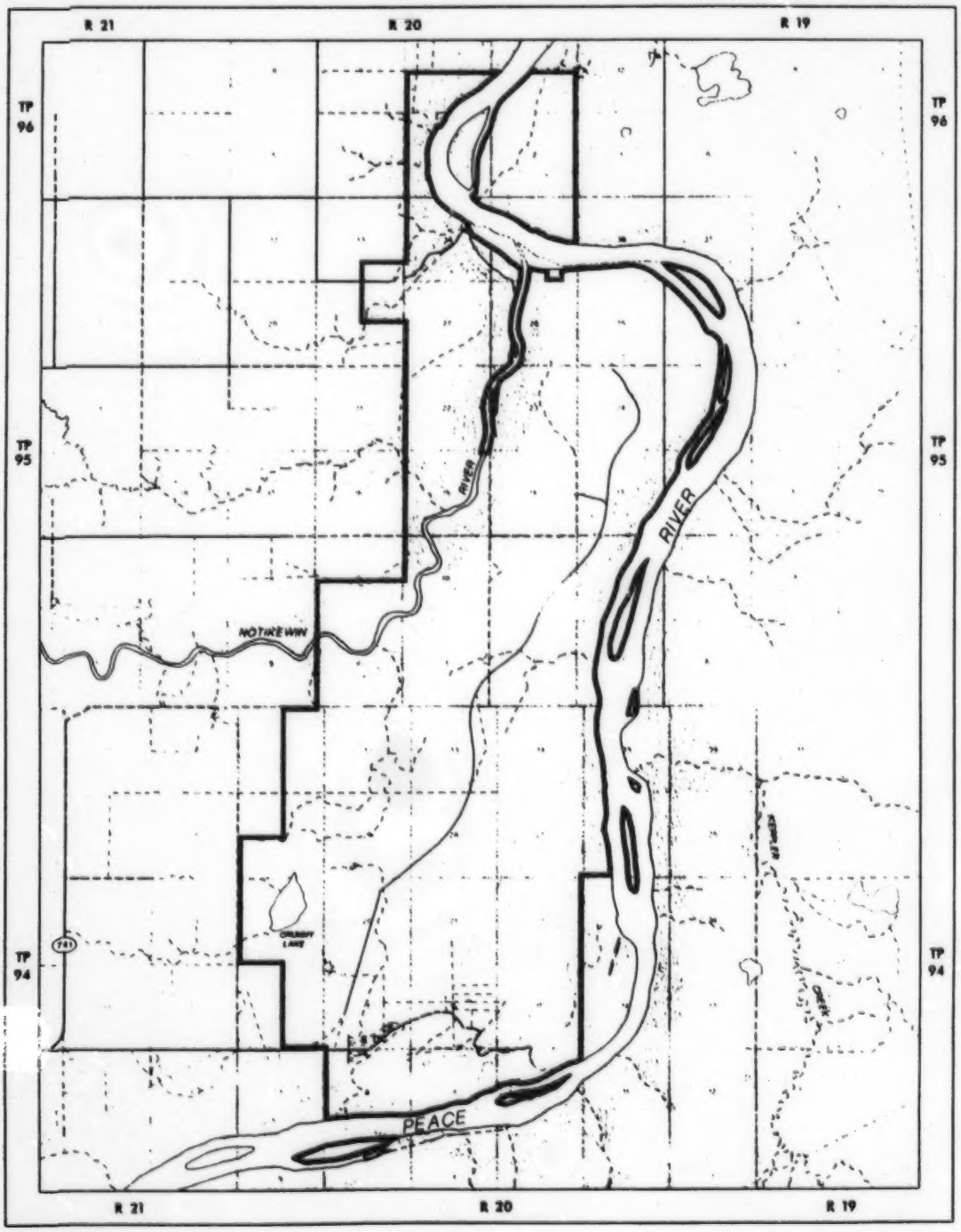


1.0 INTRODUCTION

Notikewin Provincial Park is located at the confluence of the Peace River and the Notikewin River in northwestern Alberta, north of Manning. At 9,696.76 hectares (about 97 square kilometers), it is presently the largest provincial park in the region. The park included a variety of undisturbed forests and wetlands, 6.4 kilometers of the lower section of the Notikewin River, and about 25 kilometers of the west bank of the Peace River.

The Peace River through Notikewin Provincial Park

1.1. Purpose of Management Plan

The purpose of this management plan is to provide management direction for the park for the next 10 years. This management direction takes into account the park mandate, current Natural Resources Service policies, and public input.

More specifically, this management plan will:

- describe the park (Section 2);
- place the park within the protected areas network of Alberta (Section 3);
- identify issues and concerns about the park (Appendix C);
- divide the park into zones (Section 4);
- discuss objectives and management guidelines for the park (Section 5);
- outline surrounding land use and regional cooperation (Section 6, 7); and
- discuss implementation of the plan (Section 8).

1.2. Public Involvement

The preparation of a management plan must include involvement with those interested in the management of the park, such as park users, local communities, local resource industries, and other government agencies. Their input is incorporated into the management plan.

Public involvement for the Notikewin Provincial Park management plan was done in several stages. Initially, concerns and issues about the park were identified through a visitor survey administered at the Manning Trade Fair in the fall of 1995, and a letter sent to stakeholders the following winter. The information gathered was used in the preparation of this draft management plan.

In the next stage, the plan was reviewed by other agencies and individuals who have an interest in the park. Following their review, an open house was held to give the public the opportunity to review and comment on the plan.

2.0 PARK OVERVIEW

2.1 History of Park

The Hawk Hills Unifarm Association and the Manning Fish and Game Association proposed to the province in 1974 that about 3 quarters of land at the confluence of the Peace and Notikewin Rivers be incorporated into a provincial park. At that time, this land was an undeveloped municipal park, used by local residents for picnicking, fishing, camping, and as a base camp for hunting.

In 1975, this area was announced as a proposed provincial park in the legislature. After studies confirming the suitability of the area based on its unique natural heritage features, Alberta Recreation and Parks proposed that land south of the Notikewin River also be considered for park land.

After many negotiations and considerable public input, the park was established by order in council in November 1979. A park master plan recommended that the south end of the park be the main focus of park use, and should include a campground, day use areas, and river access. However, based on public demand, limited funding, and better river access (although sometimes limited), only the north end of the park has been developed.

The levels of development and use projected in this first master plan have never been realized. Remoteness of the park from large population centers, distance from the highway, the access road in the park and the rustic facilities are factors that may have contributed to low visitation.

In spite of this, Notikewin Provincial Park remains a key protected area in the region. It contributes to Alberta's network of protected areas (see Section 3) by protecting a large, relatively undisturbed area of the boreal forest natural region along a historically significant river. It will be managed as a natural heritage site, which means that management emphasis will be on protection of the natural resources and provision of recreation opportunities appropriate to the setting of this park.

This management plan emphasizes the park's important role in protecting a large portion of relatively undisturbed boreal forest and its contribution to outdoor recreation.

2.2 Regional Setting and Access to Park

Notikewin Provincial Park is about 67 kilometers northwest of the town of Manning, the largest town in the area. Manning is 98 kilometers north of Peace River, and 257 kilometers north of Grande Prairie. Hawk Hills is the community nearest to the park.

The park was surrounded by forest when it was first established, but since then most of the land around it has been cleared for farming.

The park has 2 accesses. The main access, which leads to the north end where the park facilities are located, is north from Manning on Highway 35 (MacKenzie Highway) for 35 kilometers, then east on Secondary Road 692 for 32 kilometers. The secondary road is paved to within 15 kilometers of the park.

The other access, to the south end of the park, is east from Manning on paved Secondary Road 691, and then north to the park on gravel Secondary Road 741. The distance from Manning to the park boundary using this access is about 53 kilometers. Once inside the park, the road becomes a truck trail, used to access private land along the river.

Canada geese staging on the Notikewin River

2.3 Description of Park

2.3.1 Topography/Geomorphology

The deeply incised valleys of the Peace and Notikewin Rivers dominate the landscape of the park. Along the west bank of the Peace River, a series of 4 terraces drop to the river. Once old islands or point bars, these terraces formed as the river cut deeper and moved its course towards the east.

The river is still changing. Several large, teardrop-shaped islands inside the northern river bend are relatively new formations. At the mouth of the Notikewin, an island and large silt and gravel bars have formed and reformed from deposits carried down the Notikewin.

Away from the river valleys the park is undulating terrain, much of it wetlands. These wetlands include Crummy Lake and associated black spruce

bogs, a linear wetland[1] located on an upper terrace at the south end of the park, and smaller fens and bogs scattered throughout.

2.3.2 Geology/Soils

Bedrock of the park area was laid during the late Cretaceous age. The deepest layer of bedrock is the Loon River Formation of silty shale and laminated siltstone. Above this is the sandstone Peace River Formation. Outcrops of this rock appear in both the Peace and Notikewin river valleys. The upper layer is the Shaftesbury Formation, composed of marine shale and silt beds.

A glacier covered this area up to about 12,000 years ago. The glacier deposited till, an unsorted mixture of rock and gravel, over the area. As the glacier receded, its meltwater formed Lake Peace. In many places the till is topped by lacustrine (lake-deposited) material from Lake Peace.

Soils gradually formed overtop the surficial deposits. In the upland areas of the park soils are generally of high clay content with poor internal drainage, while soils along the river valleys are sandier.

2.3.3 Vegetation/Wildlife

Aspen is the dominant tree species in the park, and pure, even-aged aspen stands appear frequently. This dominance is maintained by periodic wildfires. The northern portion of the park was last burned in the 1940s, and some of the southern part in the 1950s. Generally white spruce becomes dominant in a dry mixedwood forest, but because of these fairly recent fires, white spruce are only beginning to repopulate. Balsam poplar often occurs in moister areas adjacent to wetlands and the river. Jack pine occurs in dry, open sites, especially on the upper terraces in the southern end of the park. A total of 281 vascular plant species and 30 moss and lichen species have been identified in the park (see Appendix D). This includes about 30 rare and uncommon species.

The diversity of habitat within the park supports at least 26 mammal, 200 bird, 13 fish, 2 amphibians, and 1 reptile species. It is exceptional habitat for large ungulates such as moose, mule deer, and whitetail deer, and for black and grizzly bear. The ungulates browse along the river edges, the wetlands, and other open areas, and the terraces are a particularly important winter range for them. Black bear use the rivers as travel corridors, and the area provides good feeding of berries, meadow forbs, insects under rotting logs, etc. The river banks provide good denning sites. Coyotes and wolves range widely throughout, and fur-bearing mammals such as beaver, muskrat, fisher, marten and weasel find suitable habitat along the rivers and in the wetlands.

Crummy Lake is an important waterfowl area, and geese and cranes use it, as well as the river for staging in the fall. Species of grouse, owl, and woodpeckers find suitable habitat in the mixedwoods. Numerous species of small songbirds nest in the aspen and willow areas.

Goldeye, northern pike and walleye are common fish species in the rivers. Wood frogs, boreal chorus frog and garter snakes occupy wetland edge habitats.

For a more complete description of the natural environment of the park, see Appendix A.

2.3.4 Cultural/Historical Resources

Little evidence has been found to date of early aboriginal use in what is now the park. The most substantial evidence was found in 1979, at a site at the foot of a creek. This yielded bone, charcoal, and fire-cracked rock, all evidence of an early aboriginal hearth.

It is probable that in historic times the Beaver people inhabited the area and camped along the Notikewin River. The name Notikewin is from a Cree word for battle, and the river was so named because some important battles between the Beaver and Cree Indians took place along its banks.

European contact began with the voyage of Alexander Mackenzie up the Peace River in 1773.

[1] This wetland, long and narrow in shape, was once a channel of the Peace River. It has a variety of bog, fen and swamp communities.

The Northwest Company built Horseshoe House, a trading post, around 1803 to compete with the Hudson Bay Post at Dunvegan. This post was probably located just outside the southern end of the park, and may have been visited by David Thompson several times. Intermittently from about 1866 to 1897 the Hudson's Bay Company operated a fur trading post, the Battle River House, on the east bank of the Notikewin where it enters the Peace. Archaeological surveys conducted in 1977 identified a series of depressions that represent the remains of this post. The site, about 2.5 hectares, is privately owned.

Other remnants of the fur trade era are two trapper's cabins. The remains of one trapper's cabin is in the day use area; the other cabin is in the southern end of the park and accessible only by the river.

Steamboats began to ply the river from Dunvegan to Fort Vermilion about 1905, and continued until about 1945. The area around the park was used for little but hunting and trapping until the 1950s, when agricultural settlement began to expand north from Manning into the Hawk Hills area and into the Breaking Point area. Now the park is surrounded by agricultural land.

2.4 Visitor Use

2.4.1. Recreation Opportunities

Sport fishing - People come to fish, particularly at the mouth of the Notikewin River, for mainly walleye and northern pike.

Boating -The rivers offer the opportunity for boating activities such as motorboating, kayaking, or canoeing, although most of the present boating activity is associated with fishing. There is no formalized boat launch, and access to the river depends on water level, conditions of the gravel bars, etc.

Day use - A picnic area contains about 10 sites with tables, fire pits and vault toilets.

Camping - the park has 19 campsites. Services include firewood, water pump and vault toilets.

Hiking – A two-kilometer interpretative trail starts at the trailer drop-off area and ends at a viewpoint overlooking the confluence of the Peace and Notikewin Rivers. The trail is called Asawapowin Trail, a Woodland Cree word for lookout. Other informal trails exist, including an old trail that leads the entire length of the park.

View from Asawapowin Viewpoint

Nature viewing - There are abundant opportunities for viewing the river, the vegetation, and the wildlife in the park.

Berry picking - visitors are allowed to pick berries as long as there is no damage to vegetation, although they should be aware that bears also frequent the berry patches.

The park is closed in winter, and offers no facilities or services in this season.

2.4.2 Park Visitation

Visitation rates at Notikewin have traditionally been low

Average party size of campers in 1994/95 was 3.6. Most of the visitors to the park are local, but a few are Americans or Europeans looking for wilderness experiences.

Park Occupancy		
	Occupied Campsite Nights[2]	Day Use Party Visits
1987 88	115	1225
1988 /89	137	1055
1989 /90	133	1125
1990 /91	0*	875
1991 /92	84	625
1992 /93	64	875
1993 /94	55	850
1994/95	76	800
1995 /96	100	1450
1996/97	33	600
1997/98	29**	1000
1998/99	72	3000 (est.)
1999/2000	120	Unavailable
2000/2001	97	Unavailable

*campground closed due to flooding and road washout

**campground flooding

A visitor survey was administered in the region in late 1995-early 1996. From this survey, the majority of visitors (60%) went for the day; about 15% camped overnight, and the rest did a bit of both. Fishing was the most popular activity in the park, followed closely by relaxing, camping and picnicking. Hiking and nature watching were also popular activities.

Respondents to the survey felt the following were the most important attributes of the park:

- its wilderness setting
- the quiet and feeling of privacy in the park
- access to river and a boat launch
- availability of split, dry firewood

They also felt that opportunities for outdoor recreation activities, the availability of cold potable water, night security, provision of hiking trails and the closeness of the park to people's homes were important.

Not considered as important for this park were amenities such as hot showers and heated washrooms, electrical and sewer hookups, paved roads to and within the park, interpretation programs, and equipment rentals.

[2] Occupied campsite night – one site occupied for one night. Day use party visit – person(s) in a vehicle entering for one day without staying overnight.

2.5 Significant Features of the Park

Size of Park

The park, at nearly 100 square kilometers, is more likely to be able to maintain species diversity than smaller parks. Thus this park plays a important role in the preservation objectives of the province.

Peace and Notikewin Rivers

The park borders the west bank of the Peace River for about 25 kilometers. This river drains the largest watershed of any river in Alberta, beginning in British Columbia and ending at Lake Athabasca, over 1,690 kilometers. The entire river is rich in natural, cultural/historical and recreational resources, and the park protects and commemorates a number of these resources.

The Notikewin River is a meandering river flowing from the Clear Hills. About 6.4 kilometers of it flow through the park before it enters the Peace River.

River Terraces

In the bends of the Peace River the land slopes down in a series of four terraces, created by the changing course of the river over a long period of time. These terraces, the only protected terraces along the Peace, have a variety of unique vegetation communities.

Slumping

The steepness of the slopes, combined with soil of high clay content, provide conditions for slumping activity along both rivers.

Peace River Islands

The Peace River has carved seven larger islands and several smaller ones from the mainland, the northern-most islands relatively recently. The islands are further evidence of the river shifting its course.

Ostrich ferns

Fern Island
This island, at the mouth of the Notikewin River, supports a stand of mature balsam poplar with a continuous ground cover of ostrich fern. Such a large stand of ostrich fern is unusual in this region.

Wildlife habitat
The willow/shrub vegetation and the relatively open terraces, facing south and east, provide prime winter range for ungulates. Bears also frequent the park, especially in berry season. Many other animals and birds are also attracted to the variety of undisturbed habitats in the park.

Diversity of Wetlands
Wetlands in the park include bogs, fens, marshes, and swamps, with a variety of grasses, shrubs, trees and wildflowers. A linear wetland, located on an upper terrace in the south end of the park, is unusual in its location.

Plant Diversity
There is a high diversity of plant species in the park, including some species not found in any other provincial park (See Appendix A for plant list).

Site of Historic Significance
The park has historic value as site of both a North West Company and a Hudson Bay Company trading post. It is also the site of battles between the Cree and Beaver people.

Ammonite Beds
Ammonite fossils can be found along the banks of the Notikewin River. Ammonites were marine creatures, closely related to today's nautilus, which lived in the warm seas during the Jurassic to Cretaceous periods, the time of the dinosaurs. They had a coiled body structure with internal chambers, and ranged in size from 2 inches to 9 feet.

Vistas
The park offers dramatic views of the river valleys from the valley rim. The new Asawapowin Interpretative Trail offers access to a view of the confluence of the Peace and Notikewin Rivers.

3.0 ROLE IN ALBERTA'S PROTECTED AREAS NETWORK

3.1 Provincial Objectives

Four broad objectives are the cornerstones of Alberta`s network of protected areas.

Preservation
Preserve and protect a system of provincially significant natural landscapes incorporating the greatest possible diversity of natural heritage as well as landscape related prehistorical and historical resources.

Heritage Appreciation
Provide opportunities for exploration, understanding and appreciation of natural heritage supported by a range of interpretive and educational programs.

Outdoor Recreation
Provides auto access and backcountry opportunities for outdoor recreation to the extent that the activities are compatible with the preservation of natural heritage values.

Heritage Tourism
Provides opportunities for provincial, national and international visitors to explore and experience Alberta`s natural heritage.

Each existing or potential protected area is assessed for its contribution to these objectives. Two tools aid this assessment – the Natural Regions framework and classification.

3.2. Natural Regions Framework

The Alberta government is committed to protecting representative samples of Alberta`s natural and cultural heritage. To help select which areas are the best samples, a framework based on natural features has been adopted. This framework is a hierarchy of natural regions, subregions, and natural history themes. Natural regions provide the "big picture" of Alberta`s

landscapes, such as grasslands, mountains, and boreal forest. The subregions and natural history themes are subdivisions of the natural regions, and provide a more specific picture of smaller areas.

There are six Natural Regions in Alberta - Boreal Forest, Rocky Mountain, Foothills, Canadian Shield, Parkland and Grassland. Differences between these regions are readily apparent by their distinct landform features and vegetation. (See Natural Regions map).

Natural Regions
↓
Natural Subregions
↓
Level 1 Themes
↓
Level 2 Themes
↓
Level 3 Themes

Each of these Natural Regions has been divided into subregions based on criteria that may vary depending on the Natural Region. The Boreal Forest Natural Region is divided into six subregions that vary with the predominant forest cover, the topography (level, undulating , or hilly), and the mix of uplands and wetlands.

Subregions are further divided into Level 1, Level 2, and Level 3 Natural History themes. Level 1 themes are based on easily observed landforms of subregions, such as wetlands and protected slopes of valleys and ridges.

Level 2 themes are more specific breakdowns of Level 1 themes. They refer to distinctive habitat types, vegetation, or highly visible geology features. Examples of wetland Level 2 themes in the Boreal Forest subregions are bogs, patterned fens, black spruce forests, or shrublands.

Level 3 themes are finer breakdowns of Level 2 themes. They include specific features such as rare plants and animals, and specific bedrock and landform types, for instance caves and waterfalls.

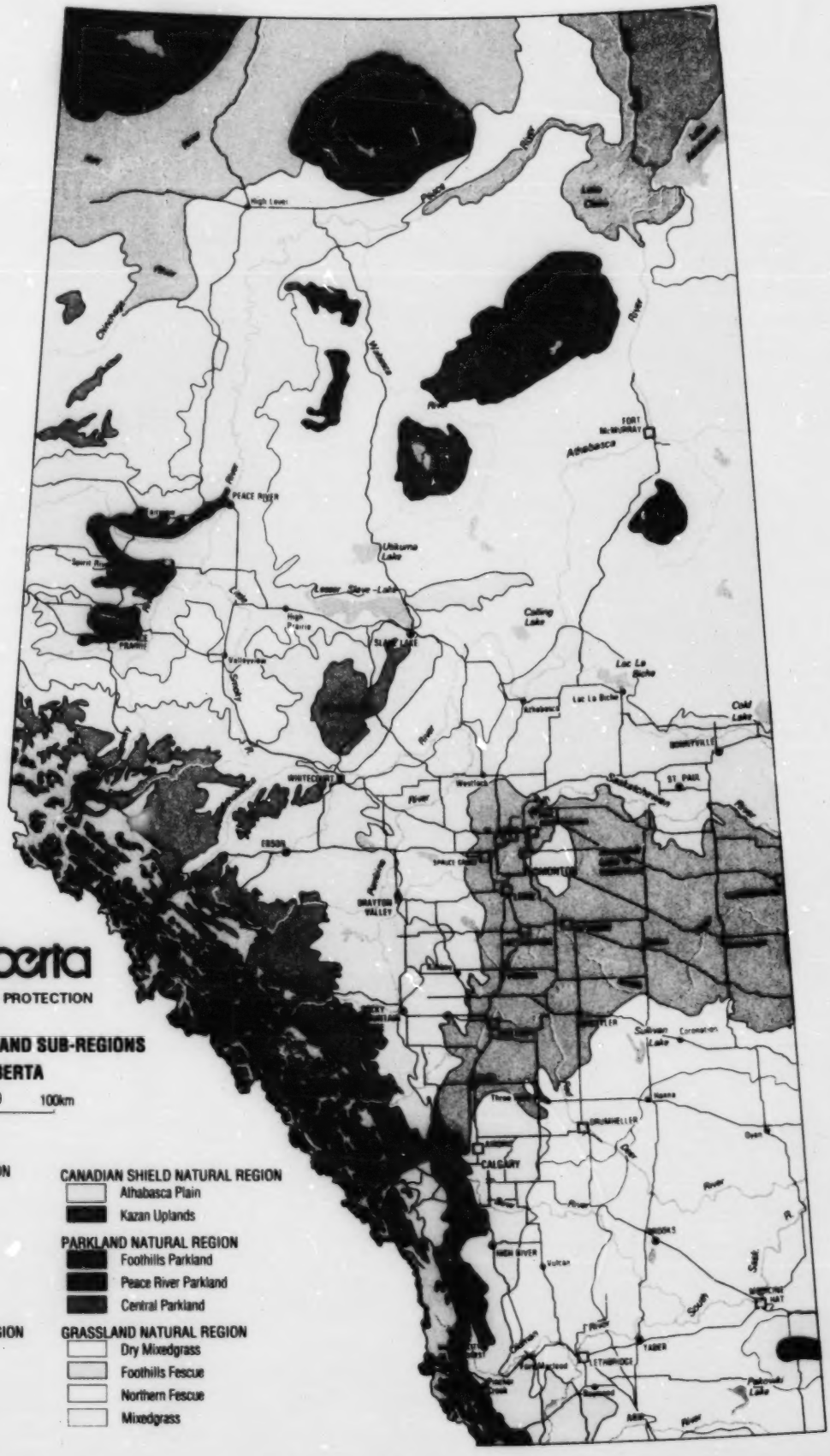
The themes, because of their detail, are most useful for identifying the natural diversity within Alberta. Level 1 themes can usually be seen on aerial photography maps, while Level 2 and Level 3 themes require detailed biophysical studies. Analysis of these themes can determine which sites in Alberta would be the best samples of our natural heritage.

Notikewin Provincial Park is located in the **Dry Mixedwood Subregion** of the **Boreal Forest Natural Region.** Table 1 shows the natural history themes located in this park.

Table 1: Natural History Themes

Natural History Themes Notikewin Provincial Park Boreal Forest Natural Region Dry Mixedwood Subregion	
Level 1 Natural History Themes	**Level 2 Natural History Themes**
Non-Sandy Upland- Ground Moraine	Mixedwood forest* Deciduous forest*
Non-Sandy Upland - Hummocky Moraine	White spruce forest* Mixedwood forest* Deciduous forest*
Sandy Upland- Sandy Plain	Jack pine forest* Deciduous forest*
Valley-Ridge - -Exposed Slope	Shale** Sandstone**
Valley Ridge- Protected Slope	White Spruce forest* Mixedwood forest** Deciduous forest* Spring**
Valley Ridge- Floor/Stream	White spruce forest* Black spruce forest** Mixedwood forest* Deciduous forest* River** Muskeg stream*
Wetland - Mineral	Marsh* Swamp* White spruce forest** Black spruce forest** Shrubbery*
Wetland - Organic	Bog** Non-patterned fen** Black spruce forest** Tamarack forest** Shubbery** Graminoids**
Lake	Eutropic

* indicates theme is well represented
** indicates theme is somewhat represented



Produced by Alberta Parks Services, Management Support Division. 1994

3.3 Classification

Protected area legislation makes provision for seven classes of protected areas:

- Ecological Reserves
- Wilderness Areas
- Wildland Parks
- Provincial Parks
- Natural Areas
- Provincial Recreation Areas
- Heritage Rangelands

Each of these classes of protected areas contributes differently to the four goals of preservation, heritage appreciation, outdoor recreation and heritage tourism.

3.4 Purpose of Notikewin Provincial Park

The purpose of Notikewin Provincial Park is:
To protect a representative sample of the Dry Mixedwood Subregion of the Boreal Forest, and to provide opportunities for local visitors and tourists to experience the outdoors in a setting with few facilities and services.

Notikewin Provincial Park contributes the following to the objectives of Parks and Protected Areas in Alberta.

Preservation Objective

- Makes a major contribution to the representation of the Dry Mixedwood Subregion of Alberta. It contains representative samples of nine Level 1 themes (out of 11) and 31 Level 2 themes (out of 46) of this subregion.
- Notikewin is a large park, about 97 square kilometers. Provincially protected areas of this size are important because they are the best possibilities for areas to exist without human activities that interfere with natural processes.

Heritage Appreciation Objective

- Offers visitors the opportunity to explore on their own a boreal forest, river valleys, and a diversity of vegetation and wildlife.
- Contains remnants of the cultural history of the area.

Outdoor Recreation Objective

- Offers the opportunity to experience recreational activities in a natural setting.
- Provides opportunities for camping experiences with only rustic facilities.

Tourism Objective

- Supports provision of nature-based tourism opportunities in the park.

3.5 Notikewin Provincial Park – Natural Heritage Site

Notikewin Provincial Park will be managed as a natural heritage site. Natural heritage sites are intended to contribute primarily to the preservation objective, but usually make a significant contribution to heritage appreciation and may contribute to outdoor recreation and tourism.

3.5.1 Role of Natural Resources Service

To manage Notikewin Provincial Park as a Natural Heritage Site, Alberta Environmental Protection will:

- Establish operating criteria for facility operation, maintenance and fees;
- Maintain responsibility for promoting the province's natural, historical and cultural resources;
- Be willing to provide educational and interpretative programming;
- Provide security services; and
- Retain overall responsibility for resource management.

3.5.2 Role of Private Sector

The role of the private sector in the management of Notikewin Provincial Park is outlined below.

- The private sector is currently operating the campground in Notikewin Provincial Park through a facility operating agreement. This arrangement will continue.

- The campground will continue to be operated and maintained at established provincial standards and fees.
- The facility operator may choose to upgrade existing facilities or to construct new facilities. This development would be approved by the department if consistent with publicly supported management plans and with the public's expectations of the park. This could be done without public review.
- Except for trails, facility development would only take place within the facility zone in the park.
- The private sector will be encouraged to become partners with the park in the delivery of protection, interpretation, site development and operation services. These partnerships could be with individuals, clubs, volunteers, and other members of the public. These kinds of partnerships have benefited the Parks and Protected Areas Program in the past, and will continue to do so.
-

3.6 Guiding Principles

The Government of Alberta has adopted the following principles that guide decision-making and program delivery in protected areas.

Ecological Sustainability – Alberta's parks and protected areas will be managed to preserve environmental diversity and ecological integrity through perpetuation of species, biological diversity and the unimpeded functioning of ecological systems and processes.

Ecosystem Management –A park or protected area is part of a larger ecosystem. Management of the natural resources in a park will be coordinated with the management of adjacent lands.

Balancing Preservation and Use – The parks and protected areas network will be managed to balance preservation and use. Different classes of protected areas accommodate varying degrees of human activities including outdoor recreation, based upon the degree of protection required for the areas' natural resources.

Environmental Stewardship – Heritage appreciation services facilitate public awareness and understanding of Alberta's natural heritage, as well as the sharing of that knowledge to foster positive attitudes and actions towards our natural heritage and its preservation.

Pines growing on the terraces of the Peace River

Shared Responsibility – The Government of Alberta recognizes that stewardship of parks and protected areas is a shared responsibility. Partnerships that foster stewardship will be promoted with the private sector, other departments and governments, First Nations, volunteers, not for profit groups and individual citizens in the planning, management and operations of parks and protected areas.

4.0 ZONING

Zoning is a management tool that divides a landscape into units and identifies the intent and objectives of each unit. It is useful over a large landscape, because values may vary within it. For instance, preservation values may have a higher priority in some parts of the landscape, and recreation values a higher priority in others.

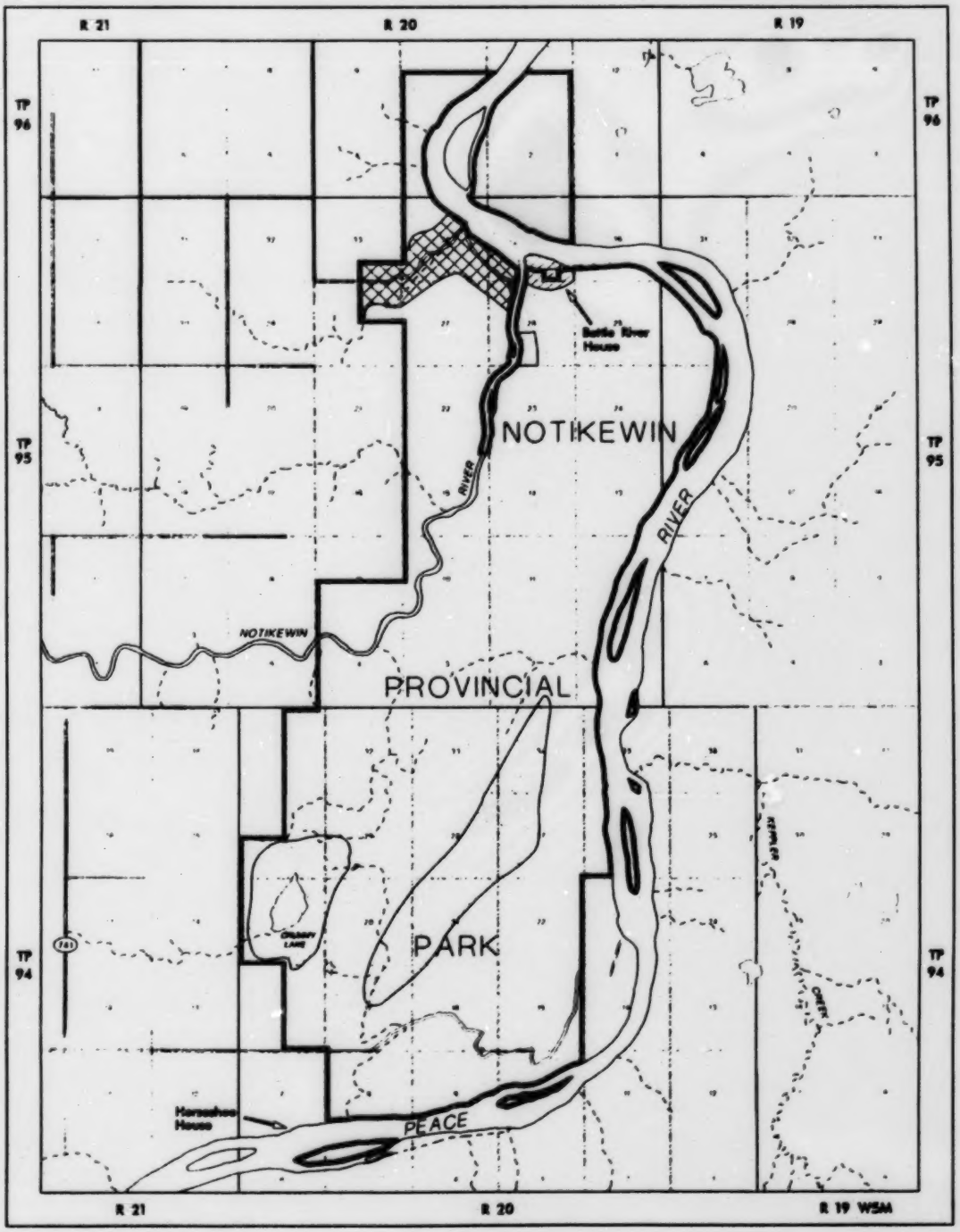
A range of zones can be applied to a provincial park. Notikewin Provincial Park is divided into 4 zones - preservation, historical/cultural, wildland and facility.

NOTIKEWIN PROVINCIAL PARK

Preservation Zone | Facility Zone | Historical/Cultural Zone

Remainder of Park is Wildland Zone

Produced by Land and Forest Service, Northwest Boreal Region | Scale = 1:75 000 | Produced from Digital Data, NAD 83



Preservation Zone

Four areas within the park are designated as Preservation Zones: the linear bog complex, Crummy Lake and associated wetlands, Fern Island, and the ammonite beds. The 2 wetland areas provide excellent representation of Level 2 Natural History Themes, and Fern Island and the ammonite beds are special features of the park.

These areas will receive the highest level of protection in the park. Use of the ammonite beds will not be encouraged because it is located on a riverbank, an area sensitive to impacts. Only low impact, dispersed recreation activities such as hiking, cross-country skiing and nature observation are appropriate in the other areas in this zone.

Historical/Cultural Zone

Although the site of the trading post, Battle River House, is actually private property, it is designated a historical/cultural zone to emphasize its historical value. Use of this area will be restricted to heritage appreciation.

Facility Zone

The facility zone in Notikewin Provincial Park is a wide corridor from the park entrance down to the river, and includes the park operations area, the access road, the trailer parking area, the trail to the lookout, the boating access area, and the camp and day use sites. This zone will accommodate the greatest amount of use in the park.

Wildland Zone

All of Notikewin Provincial Park not included in the other zones is a wildland zone. In keeping with the intent of this zone to protect the landscape and provide opportunities for backcountry experiences, only non-motorized use of the zone will be allowed, and any facilities will be rustic.

5.0 MANAGEMENT OBJECTIVES AND GUIDELINES

For the most part, the natural environment of the park is self-sustaining. Management guidelines will focus on sustaining the natural processes in the park, and on managing visitor use.

5.1. Preservation

5.1.1. Preservation Objectives

- To sustain the diversity of landscapes in the park, and their associated vegetation and wildlife.
- Special emphasis will be placed on protecting the representative, rare and special features of the Boreal Forest Natural Region present in the park.
- To coordinate protection of Notikewin Provincial Park with adjacent landowners and other agencies.
- To support and encourage scientific and educational activities that may increase understanding of the area.
- To encourage stewardship of the park.

5.1.2 Current Situation

The park is representative of a diverse dry mixedwood boreal forest. Its large size contributes to maintaining its diversity with a minimum of human interference. Natural processes are not interfered with, with the exception of forest fire suppression. At present there are few impacts from outside which threaten its ecological integrity.

The forest is of various types and age classes, ranging from pure stands of even-aged aspen to mature mixedwoods of aspen, balsam poplar and white spruce on the lower terraces and river islands.

Some timber harvesting has occurred in the area before park establishment. The mature spruce not burned in the most recent wildfires, including those near the mouth of the Notikewin River, were harvested in the 1960s. Checkerboard Island was also logged of spruce in a cut block pattern, hence its name. In the late 1970s white spruce in the south end of the park were selectively removed.

The diverse landscape continues to provide habitat for a variety of animals. Black bears frequent the park, and occasionally grizzly. Ungulates use the mix of habitats in the terrace complexes, especially in winter.

5.1.3. Management Guidelines

Geology/Soils
This includes landforms such as the terrace complexes, slump slopes, island sandbars, as well as soils.

Slumping occurs along the river and creek banks. Facilities such as roads and trails will not be placed where they could aggravate or accelerate this natural process.

Erosion of geomorphic or geologic features from human use, such as erosion along the hiking trail, will be monitored and erosion mitigated and/or prevented.

Roads in the park are easily eroded because of the high clay content of the soil and the steepness of the grade. The northern access road is particularly susceptible to erosion. Roads will be monitored and maintained as necessary.

Ammonite beds lie on the banks of the Notikewin. Because it is a special feature of the park it has been zoned a preservation zone to protect it from human disturbance. Fossils found in this area, or anywhere in the park, must not be removed.

Aquatic Systems
The significant aquatic features are the Peace and Notikewin Rivers, Crummy Lake and associated upland wetlands, and the linear wetland.

The rivers are the major natural and recreational components of the park, and their natural character and hydrological processes will not be interfered with. Flooding is a potential disturbance, but because the Bennett dam has reduced the fluctuations in seasonal water levels, floods are not as frequent or as severe as pre-dam conditions.

Protection of the public will be foremost if a flood should occur, including evacuation of the park if flood warnings warrant. Monitoring of the water level is done regularly by B.C. Hydro, and Water Resources Service does flood forecasts for the Peace River. The park will communicate regularly with these agencies concerning flooding potential.

Crummy Lake and associated wetlands, and the linear wetlands, will be allowed to evolve naturally.

Vegetation
Vegetation is the basis for wildlife habitat and contributes to the visual and recreational attraction of Notikewin Provincial Park. The park contains a diversity of trees, shrubs, wildflowers, mosses and lichens that are typical of the boreal forest. See Appendix D for list of vegetation species in the park.

In general the forest communities will be allowed to succeed naturally. Only in the facility zone may vegetation be altered or removed if it is hazardous to visitors and facilities.

A forest in a park can be managed to achieve specific objectives. Management actions could include prescribed burning and selective tree and stand removal. However, at this point the forest in Notikewin Provincial Park is a healthy sample of a diverse Dry Mixedwood forest, and there is no need to manage it. The forest will be monitored to detect changes that could be of concern.

Notikewin Provincial Park contains a number of provincially and locally rare, endangered or sensitive plant species and communities. If they are located near campsites and trails they will be monitored to ensure their protection.

Choke Cherry (Prunus virginiana) grows in Notikewin Provincial Park

Use of herbicides and pesticides for control of weeds and insects, rodents or other pests will follow park policy, and will only be used in the facility and access zones. The policy (Policy 8.8, Policies, Procedures and Directives Manual) states that use of herbicides/pesticides may be an appropriate option when public health or safety is threatened, facilities or natural vegetation are threatened, or to avoid the spread of weeds unto adjacent private lands. In other cases natural means of weed and insect control should be used.

Forest Wildfires/Diseases

All wildfires with the potential to negatively impact the ecological values and the facilities inside the park and/or resources on adjacent lands will be suppressed.

A Fire Control Plan for the park, developed with Land and Forest Service, will be reviewed annually. The plan will include those items outlined in Policies, Procedures and Directives Manual 8.1.9, as well as a fire history of the park and adjacent lands, and locations of rare/uncommon vegetation species.

Because of fire suppression over a number of years, fuel load has built up in some areas of the park. This could be particularly hazardous in the facility areas. Fuel load in the facility zone and in the area surrounding it will be assessed. Appropriate methods for reducing fuel load will be investigated, and could include selective horse logging and prescribed burns.

Monitoring of insect and disease infestations will be carried out as required and control/eradication measures will be applied when the ecological values in the park and/or resource values on adjacent lands are at risk or threatened.

Wildlife

The focus of wildlife management will be the protection of habitat for the wide variety of wildlife in the park. Any management action will be considered for its effect on this habitat and consequently on the wildlife.

The park is the natural habitat of black bears and occasionally grizzly bears. For the protection of both bears and humans, management will focus on prevention or reduction of bear-human encounters. This will be done by:

- monitoring bear activity in the park ;
- promoting bear awareness and keeping visitors informed about bear activity in the park. Visitors should be aware that from July to September bears feed on the berry crop in the jack pine woods on the southern terraces, and on berries in the campground.
- educating visitors about camping practices appropriate to bear country and about appropriate behavior around bears.

Bears that become conditioned to the park will be monitored closely. Some incidents, such as frequent sightings or displays of aggression, may result in the bear being removed from the park and/or destroyed. Conditioning of bears to humans often results in the death of the bear, so park visitors should discourage this through careful camping practices and appropriate behavior in the wilderness.

Bear/human conflicts will be dealt with as per park policy (Policy 8.3, Policies, Procedures and Directives Manual).

Beaver whose activity threatens facilities will be removed.

Cultural Resources

One archaeological dig in the park, at the mouth of the creek parallel to the access road, was likely a site of successive occupation by aboriginal people. This site is subject to serious natural erosion that would destroy potential evidence of prehistory in this region. The site will be monitored for the effects of erosion, and appropriate action taken if the site is endangered.

The few other archaeological digs in the park have yielded little prehistoric evidence, but the surveys have been too brief to give a good indication of the potential of the park (Le Blanc 1980). Any archaeological research will be encouraged in the park. If further development occurs, an archaeological survey will be conducted on the development site.

One trapper's cabin and the site of the Hudson's Bay Company trading post are in, or close to, areas frequented by visitors. Park management will encourage visitors to continue to respect these remnants of our cultural heritage with signs explaining their heritage value.

Visitors are asked to leave found artifacts in the park, and to report their findings to park staff.

5.2. Heritage Appreciation

Heritage appreciation is a valuing of our heritage, both natural and cultural. Aids to heritage appreciation include interpretation, environmental education, and information. ***Interpretation*** refers to effective communication of our natural and cultural heritage in a way that helps people appreciate, understand and care for it. Interpretation can be done personally, for instance by a park ranger leading a nature walk, or impersonally through signs and displays. ***Environmental education*** is generally more formal, and usually tied in to school curriculums. ***Information*** helps visitors plan their visit to the park and makes it more enjoyable by creating awareness of park features and of park regulations.

5.2.1. Heritage Appreciation Objectives

- To encourage awareness, understanding and enjoyment of the natural and cultural features of the park, and to appreciate its value.
- To foster understanding of the provincial protected areas network and the role of Notikewin Provincial Park within it.
- To provide information to the public about Notikewin Provincial Park.
- To encourage others to help protect and promote the park.

5.2.2 Current Situation

To date there has been little demand for heritage appreciation services in the park. Occasionally patrolling staff give informal presentations during the summer season.

A self-guided trail, with interpretative signs posted at intervals to explain features of the boreal forest, has been developed. This trail leads from the trailer drop-off parking lot to a scenic lookout over the confluence of the Peace and Notikewin Rivers. The trail is named Asawapowin, a Cree word for lookout. This trail is a Watchable Wildlife trail.

A new information sign will be placed at the trailer drop-off parking lot to inform visitors about the features of the park. Information cubes are already in place in the day use area and campground. They display information relating to public safety, facility and site orientation, regulations, and recreation and heritage appreciation opportunities.

5.2.3. Management Guidelines

When staffing allows, personal interpretation services may be offered in the park on an informal basis, for instance informally organized guided walks.

Visitors will also be encouraged to explore the natural heritage of the park on their own, as long as it is consistent with protection values.

Depending on funding, a facility map will be produced for visitors to the park..

Directional signs on Secondary Road 692 leading to the north end of the park will be maintained.

The campground operator and volunteers will be encouraged to provide heritage appreciation opportunities for visitors.

5.3. *Outdoor Recreation*

Within the protected areas network of Alberta, a range of outdoor recreation experiences are offered. For instance, camping opportunities range from random camping in wilderness parks to camping in parks with the full complement of facilities and services. Notikewin Provincial Park lies more to the wilderness part of the spectrum, offering the opportunity to experience wilderness in a boreal forest setting with the support of minimal rustic facilities.

5.3.1. Objectives

- To continue to provide wilderness-type recreation opportunities, with minimum facilities, in a relatively large, pristine provincial park.
- To provide opportunities for private sector and volunteer involvement in the delivery of recreational services that are consistent with park objectives.

5.3.2. Current Situation

The most popular outdoor recreation opportunities in the park are fishing, picnicking, hiking, berry picking and camping. Boat access to the river is of great importance. However, there is no formal boat launch, and good access depends on river levels. There is one formal hiking trail in the park, but there are other old roads, trails and cutlines that would be suitable for hiking.

The access road in the park has been subject to slumping and erosion over the years. The last serious problem occurred in 1990, when the road was closed much of the season due to severe flooding and erosion. The road was rebuilt, the creek straightened and larger culverts installed. Since then the road has remained in good condition. In very rainy weather some trailer units could have difficulty climbing the hill.

The campground has been operated by a facility operator for the last 3 seasons. This arrangement will continue as long as contracts can be negotiated. If no contract bids were successful, the campground would be operated by Natural Resources Service per guidelines for a natural heritage site.

5.3.3. Management Guidelines

Park Roads/Parking Areas

The north entrance will continue to be the main access to the park, since that is the location of the facilities. The internal park road will continue to be maintained for access to the river and the campsites. There are no present plans to pave the road, but it will be maintained in good graveled condition. If slumping and erosion becomes a serious problem in future, an alternate access route may have to be investigated. As per draft legislation, new roads may be considered in Natural Environment Provincial Parks to re-route or replace pre-existing roads that are in ecologically sensitive locations to reduce environmental impact.

A parking lot is located at the top of the hill before the park road descends to the river. This provides

the opportunity for visitors to unhitch their trailers/units and leave them at the top if they do not wish to navigate the hill with them. This area can also be used for camping, and is supplied with rustic camping facilities.

Another parking lot is situated near the boat launch area on the shore of the Peace River. Toilet facilities are located in the day use area about 150 meters from the parking lot. Some visitors have requested that toilet facilities be located closer to the boat launch area, but this is not feasible because of seasonal fluctuation of the water level and potential ice damage.

The road in the south end of the park provides access for non-permanent residents to their private landholdings along the river. It is a dirt road suitable for trucks/utility vehicles. The landholder or his tenant also does minimum maintenance when necessary.

Campsite in Notikewin Provincial Park

Camping Facilities

The camping facilities are located at the north end of the park. When the park was first established, development in the south end of the park was proposed, but because of public demand the north end was chosen for development. Visitor demand has not warranted the expense of developing and maintaining two campgrounds in the park, so the south end has not been developed. This could be considered in future if demand warranted it, but such a development would incur major costs, including improving the access road and building the campground. As well, the south end of the park is even more remote from a major highway than the north end, and it is doubtful that it would draw enough visitors to justify such a major expense.

There are no electrical hookups in the park, and present use levels do not justify the expense of installation.

Other Recreational Opportunities

Small-scale developments which enhance the backcounty recreational opportunities in the park will be considered, as these are in keeping with the character of the park. The developments would be a joint project between the facility operator, volunteers and Natural Resources Service, and could include:

- developing a trail from the north end of the park to the south end. This could be a trail suitable for hiking and for equestrian use.
- Developing a backcountry campsite at the south end, and perhaps one halfway between the north and south ends. These could be used by hikers and by trail riders.
- Construction of a pedestrian suspension bridge across the Notikewin River to facilitate use of this proposed north/south trail.

The park will support efforts of the facility operator to promote and deliver other recreational opportunities that are appropriate to the park. Any proposed development that was outside the guidelines of this approved management plan would need public review.

Many local people visit the park for day use. The park will continue to offer opportunities for quality day use, and will work with the local communities to enhance their enjoyment, understanding and appreciation of the park.

Boat launch opportunities on the river are presently subject to river conditions. Alberta Environmental Protection, Water Resources has studied the feasibility of installing a boat launch, and has found it cost-prohibitive. However, Natural Resources Service would entertain a partnership arrangement to maintain a low-cost river access.

Private sector parties will be encouraged to offer recreational opportunities in the park. These could include hiking and trail riding, boat tours, and playground units.

Berrypicking is allowed in the park. However, be aware that bears frequent the berry patches during blueberry season.

5.4. Heritage Tourism

Notikewin Provincial Park is the only provincial park bordering the Peace River which offers a wilderness experience and a first-hand look at a mostly undisturbed boreal forest.

5.4.1. Heritage Tourism Objectives

- To promote the park for its setting and natural features, and as an area for wilderness-type outdoor recreation.
- To support tourism-related opportunities for heritage appreciation and outdoor recreation that are compatible with the character of the park.
- To encourage the local community to take an active part in supporting and promoting the role of the park in regional tourism.
- To ensure that the park's natural features remain sustainable so that backcountry tourism opportunities can be offered into the future.

5.4.2 Current Situation

Tourist use of the park is low, but the park has the potential to attract both Canadian and international tourists interested in wilderness travel and nature tourism.

Up to now, little tourism promotion of the park has occurred, except for promotion in a regional parks magazine called Peace Country Times produced in 1996, and in other park publications and brochures.

Thus far the presence of the park has not contributed significantly to the economy of the area. However, the park provides opportunities for local businesses to operate appropriate commercial activities in the park. The campground operator is an example of this.

5.4.3. Management Guidelines

Tourism opportunities at Notikewin Provincial Park will focus on its naturalness and its opportunities for backcountry experiences. These are the features that will be emphasized in park promotion.

Current information about the park will be made available in Manning at the tourist center and other appropriate spots.

The park is willing to work closely with the local community, such as the town of Manning, the local M.D., Chamber of Commerce, and other appropriate groups to promote the park within the community and further abroad.

The park will continue to be promoted in park publications such as Peace Country Times, in departmental brochures, and at trade fairs where the department is represented.

Natural Resources Service is a partner of the Alberta North Tourism Association, and Notikewin Provincial Park is promoted in its widely distributed publications. The park is also promoted in a tourist initiative involving Montana and Alberta called the Heritage Passport Program.

The park will continue to entertain proposals for appropriate business opportunities from local people.

6.0 Surrounding Lands

6.1 Surrounding Land Use

The park is nestled within two large bends of the Peace River, and consequently is bounded on the south, east and north by the river. Most of the west boundary, about 25 kilometers, abuts cultivated farmland.

The park surrounds two pieces of privately owned land. One piece, about 133 hectares, is near the southern end of the park along the river, and is accessed by the south park road. Negotiations to obtain this land to add to the park have not been successful.

The other piece of land is a small parcel along the Peace River near the mouth of the Notikewin River. This parcel of land was the site of the Hudson's Bay Company Battle River Post.

6.2 Dispositions

The only dispositions within the park are a power line and a North Peace Gas Coop pipeline into the maintenance area of the park.

Any disposition activity in the park will be guided by the draft Natural Heritage Act and management guidelines (1998). Those which apply to Notikewin Provincial Park include:

- Surface access to new sub-surface mineral dispositions will not be allowed.
- New pipeline corridors are not permitted.
- Construction of new roads, pipelines, power lines and other utilities will be prohibited except to upgrade existing facilities or to re-route or replace pre-existing roads that are in ecologically sensitive locations.

6.3 Additions to Park

If the two pieces of privately owned land within the park become available for purchase, Alberta Environment will consider purchasing the land to add to the park.

7.0 Regional Integration

One of the principles of ecosystem management of protected areas is that they cannot be managed in isolation from the surrounding lands. What happens on lands around protected areas may have an impact inside. In turn, the presence of a protected area may affect management of land adjacent to it

Notikewin Provincial Park recognizes this principle, and the importance of regional cooperation in making decisions about land use. It seeks to be a "good neighbour" with land owners and managers of adjacent lands, and with the local community.

7.1 Adjacent Land Users

An oil pipeline crosses the Peace River just to the north of the park.

The forests across the river, except for about 7 sections that are under Protective Notation for Alberta Environmental Protection, are part of the Forest Management Agreement (FMA) of Daishowa-Marubeni International Ltd (DMI). Parks will work with Land and Forest Service, who are the land managers, and DMI to ensure that the aesthetics of the river valley are considered in forest harvesting plans.

The dry mixedwood forest within the park is relatively unaltered by human use, and with the exception of forest fires and diseases and pests, natural processes will continue without interference. Within these management constraints, the forest in the park could be used as a benchmark against which to compare forests outside the park altered by human use. Natural Resources Service supports use of the park in this way.

The park will continue to practice a "good neighbour" policy with farmers adjacent to the

park, and with the private landholders within the park.

7.2 Local Community

Hawk Hills is the community nearest to the park, while Manning is the largest town in the region.

The park is willing to work with the community of Hawk Hills to promote appropriate community use of the park, including special community events.

The park is willing to support efforts by local groups, such as the Manning Chamber of Commerce, to promote tourism in the region, and tourism use of the park.

8.0 IMPLEMENTATION OF PLAN

8.1 Plan Implementation

Implementation of the management plan will proceed through ongoing operations. Those developments which are proposed will proceed on a priority basis as budget resources allow.

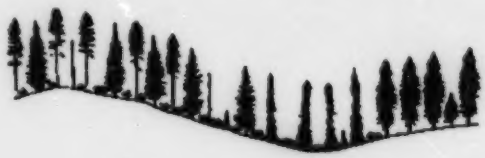
8.2 Plan Review

This plan will be reviewed not later than ten years from its date of approval. A review can be initiated sooner if warranted.

Natural Resources Service will initiate the plan review. Members of the local groups and agencies who helped in its preparation will be asked to participate in the review. The general public will also be given an opportunity to review the amended plan.

The review will:

- Review the objectives and the effectiveness of the management guidelines outlined in this plan;
- Address issues that arise subsequent to the approval of this plan; and
- Revise those sections of the plan which need updating because of changing situations.



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Appendix A Description of Park

Topography/Geomorphology

The dominant topographical feature of the park is the deeply incised valleys, to a depth of 150 meters, of the Peace and Notikewin Rivers. Two smaller creeks have also cut deep gorges. One of these, in the northwest portion of the park, bears the present access road down to the Peace River. The other creek enters the Notikewin River from the north about 2 km. from the confluence. The valley sides of the rivers and creeks are generally steep, and subject to frequent slumping. The uplands area of the park is gently undulating.

The west bank of the Peace River inside the bends falls in a series of 4 terraces which are level to gently sloping, and which drop, steplike, down to the flats of the river. These terraces originated as point bars or islands inside the meander of the river when it was at a higher level. The river channel appears to be still migrating, having relatively recently cut off three large, teardrop-shaped islands inside the upper bend.

At the mouth of the Notikewin, an island and large silt and gravel bars have formed from deposits carried by the Notikewin into the Peace River.

Since the building of the W.A.C. Bennett Dam in 1972, water flows on the river have been regulated, resulting in lower seasonal fluctuations. This means a greater flow in fall and winter months, and a lesser flow in spring and summer.

Geology and Soils

Bedrock of the park area was laid during the Cretaceous age. The lowest layer of bedrock is the Peace River Formation of mostly sandstone that occurs along the Peace River valley. Outcrops of this formation occur within the park. Above this is the Shaftesbury Formation, composed of marine shale and silty beds. The majority of the park is underlain by this formation.

Surficial deposits in the park consist of mostly lacustrine (lake-deposited) material derived from Lake Peace, a proglacial lake formed during the last glaciation which ended @10,000 years ago. This material overlays undulating moraine (glacial till). A band of alluvial (river deposited) and aeolian (wind formed) material lies near the edge of the upland as it nears the Peace River.

Soils of the upland are generally an Orthic Gray Luvisol, derived from ground moraine parent material These soils have a high clay content and poor internal drainage. The soils of the valley slopes is mostly Orthic Eutric Brunisol, a sandy soil derived from fine textured till. This soil is easily eroded in the steep valleys. On the higher terraces, both types of soils have developed on sand and gravels, with a fairly stoney surface. The lower terraces consist of layered deposits of finely textured alluvium. A soil survey (Greenlee 1979) contains more detailed information of the soils and surficial deposits of the park area.

Climate

The park area typically has short, cool summers and relatively long winters. Annual rainfall is about 250mm., and annual snowfall about 1.4m. Prevailing summer winds are from the west

Vegetation/wildlife

Aspen is the dominant tree species in the park. Its dominance has been maintained by periodic fires, evidenced by the appearance of frequent pure, even-aged stands. Balsam poplar often occurs in association with aspen, particularly in moist upland and terrace areas. Along the river flats and on the islands it is commonly found in association with paper birch.

Fire is the dominant natural disturbance of the boreal forest. The last fire within the park that was of any size (over 200ha.) burned the southern quarter of the park, south of Crummy Lake, in 1955. In the 1940s the northern portion of the park was subject to fairly widespread burning (Loomis and Bradley 1978).

Generally aspen succeeds to white spruce in a boreal forest, but because of the fairly recent fires white spruce are only beginning to repopulate. Parts of the lower terraces and the islands, which escaped recent fires, support lush mixedwoods of balsam poplar, paper birch, and white spruce. Jackpine occurs in dry, open sites, especially on the upper terraces in the southern end of the park.

Wetlands in the park include Crummy Lake and associated black spruce bogs, a linear wetland of fen, bog and marsh, and other marshes located on an upper terrace at the south end of the park, and other fens and bogs scattered throughout the upland.

A total of 281 vascular plant species and 30 moss and lichen species have been identified in the park.

The diversity of habitat within the park supports at least 25 mammal, 200 bird, 13 fish, 2 amphibian, and 1 reptile species. Large ungulates such as moose, and mule and whitetail deer, browse along the river edges, the wetlands, and other open areas in the park. The park is an important winter range for them. Black bear are abundant throughout, and grizzlies have been sighted. Coyotes and wolves range widely. Fur-bearing mammals such as beaver, muskrat, fisher, marten and weasel find suitable habitat along the rivers and in the wetlands.

Crummy Lake is an important waterfowl area, and geese and cranes use the river for staging in the fall. Species of grouse, owl, and woodpeckers find suitable habitat in the mixedwoods. Numerous species of small songbirds nest in the aspen and willow areas.

Of the fish, goldeye, northern pike and walleye are the most common. Wood frogs, boreal chorus frog and garter snakes occupy wetland edge habitats.

Biophysical Units

For the purposes of a more detailed description, this large and diverse park has been divided into the following biophysical units: rivers (open water, bars and shores, islands); valley sides (terrace complexes, slump slope complex, linear wetland); and upland (poorly drained uplands, well drained upland) (Loomis and Bradley 1978). Vegetation and wildlife are discussed under each of these units.

Rivers

Open water

Aquatic vegetation in both the Peace and the Notikewin Rivers is minimal because of the swift currents. Thirteen species of fish are expected to be present in the Peace and Notikewin Rivers; the most common reported catches are northern pike and walleye.

Bars and Shores

Transitory bars and shores are silt and gravel deposits on the upstream side of islands in the Peace River and at the mouth of the Notikewin, formed because of fluctuating flow regimes. They are visible when river levels are low in summer and fall.

Vegetation communities here are characterized by a sparseness of ground cover, but a diversity of plant species take advantage of the lack of competition because of periodic flooding. Many of them are introduced annual herbs, such as sweet clover, tansy mustard, common plantain, and annual hawksbeard. Colonizing grass species include quack grass, brome, Canada wild rye and foxtail barley. Sandbar willow and Mackenzie's willow are abundant on the inshore of beaches and on the high points of bars where flooding is less frequent.

Most of the large mammals in the area come down to the rivers to drink, leaving their tracks as evidence. Canada geese nest in the sparse vegetation on the shores, and use the dry channels between the islands and the mainland as a staging area in the fall. Sandhill cranes have also been noted to use the sandbars during migration. Shorebirds include the spotted sandpiper.

Islands

The islands have been formed by the fluvial processes of the rivers. Vegetation on them exhibit a variety of successional stages, from pioneering sandbar willow communities to mature white spruce communities. Plant community succession on the islands has not been disrupted by fire as on the mainland, although stages probably correlate with depth of water table and flood frequency.

The upstream ends of the larger islands and the smaller islands are dominated by willow communities. Species associated with these willows are common horsetail, hair grass, Indian hemp, evening primrose, hedge nettle and sow thistle. Farther inshore willows intermix with river alder and balsam poplar. Often large piles of debris from flooding disrupt the vegetation cover in this habitat.

Above the flood line, the willow communities mix with varying proportions of wolf willow, dogwood, rose, river alder and young balsam poplar. The sparse herb cover includes horsetail, Canada wild rye, reed grass, veiny meadow rue, and sweet-scented bedstraw. As one goes farther inshore willows become less abundant and the balsam poplar increase in size.

On larger islands mature balsam poplar are mixed with aspen, paper birch and white spruce. Shrubs include river alder and willow, dogwood, high-bush cranberry, rose, wild red raspberry. The herb understory includes common horsetail, woodland strawberry, dewberry, lily-of-the-valley, wintergreen, bishop's cap and twin flower. Fern Island, at the mouth of the Notikewin, is unique to the region in that it supports a mature balsam poplar stand with a cover of one meter high ostrich ferns.

The larger islands support, mainly towards their downstream ends, mixedwood stands dominated by mature white spruce. In these stands with a tall, dense canopy the shrub and herb layers are sparse, although feather mosses thrive here on rotting deadfall. Logging has occurred on Checkerboard Island and, in the logged areas, marsh reed grass thrives.

Many bird species use the varied habitats on these islands. Canada warblers, yellow warblers and song sparrows frequent the willow fringes. American redstarts, least flycatchers and Swainson's thrushes use the balsam poplar woods, and hermit thrushes, boreal chickadees, western tanagers, bay-breasted warblers and golden-crowned kinglets reside in the mature mixedwoods. Pileated woodpeckers are also present.

Moose and deer browse on the islands, as the dry channels between the mainland and many of the islands in late summer and fall allow easy access.

Valley Side

Terraces

Vegetation on the terraces is complex because of the varying factors of slope, aspect, soil, drainage, and fire and biological interaction.

The lower terraces immediately above the riverbanks largely support lush balsam poplar stands with understories of western shining willow, beaked willow, dogwood, Indian hemp, rose, and horsetail. In the depressions of old channels balsam poplar decreases and willow and rose increase. Birch, with an understory of wild sarsaparilla, enters the canopy on well-drained, sandy sites. White spruce on the lower terraces is associated with seepage areas and streams.

Much of the middle terraces are aspen dominated, with variation in age and understory governed by the fire history and moisture regime. The sections burned within the last 50 years support pure dense stands of aspen. The shrub understory is composed of beaked willow, rose, snowberry, buffalo berry; common herbs are hairy wild rye, peavine, asters, veiny meadow rue and wild lily-of-the-valley.

In areas of the middle and upper terraces which are not aspen dominated, vegetation can be correlated with the moisture regime. In fairly damp sites a mixedwood community of balsam poplar, paper birch, white spruce and aspen occurs. In these areas a dense shrub cover of rose, saskatoon, low-bush cranberry, spreading dogbane, buffaloberry and wild red raspberry can be found, while the herb cover includes hairy wild rye, fireweed, peavine, showy aster, wild sarsaparilla and wild lily-of-the-valley.

Wet communities are sparse here, except for the linear wetland on an upper terraces in the southern end of the park. This unique wetland includes white spruce feathermoss woods, black spruce-sphagnum moss bogs and willow-sedge marshes.

Dryer sites are associated with well-drained, sandy soils. Jackpine is the key component of this community type, alone or in association with aspen, balsam poplar and white spruce. Ground cover is often lichens and mosses, grasses include hairy wild rye and rice grass, herbs and low shrubs include cut-leaved anemone, wild lily-of-the-valley, bluebell, early blue violet, wild strawberry, northern bedstraw.

The terraces provide the greatest diversity of habitat within the park for animals and birds. Mule deer and moose range throughout, with moose browsing fairly intensively on the willows along the riverbank in winter. Black bear frequent the area. Porcupine, snowshoe hare, red squirrel, chipmunk, and northern flying squirrel are also present.

Hairy, downy and pileated woodpeckers and yellow-bellied sapsuckers, ruffed grouse, blue jay, red-eyed vireo, ovenbird, nighthawks, evening grosbeaks, purple finches, pine siskins, common flickers, red breasted nuthatch, hermit thrush, solitary vireo, and a variety of hawks are all seen on these terraces.

Slump Slopes

Slump slopes are formed as a result of incising by the rivers and movement of ground and surface water. Most of these areas are steep and composed of unstable soils, and in some places are subject to annual slumping. One slump area is the creek valley which contains the access road to the campsite. The banks of

the Notikewin are also slump areas, as well as the western bank of the Peace except for the terrace complexes.

The small alluvial flats in this unit support lush stands of white spruce, balsam poplar and paper birch; most of the spruce on the flats along the Notikewin River has been logged. Generally the understory is rich with river alder, western shining willow, dogwood, baneberry, high and low bush cranberry and currants. Herbs include horsetail, wild sarsaparilla, woodland strawberry, wintergreen and bishop's cap.

Most of the slopes and small terraces within the slump areas are covered in aspen and/or paper birch, with some white spruce. Generally a dense shrub understory includes beaked willow, river alder, pincherry, dogwood, beaked hazelnut, rose, snowberry, prickly red raspberry, saskatoon berry, Indian hemp, low-bush cranberry, buffaloberry and twining honeysuckle. A sparser herb cover could include hairy wild rye, showy aster, wild sarsaparilla, common horsetail, fireweed peavine, wild vetch, fairy bells, northern bedstraw, bunchberry, wintergreen, wild lily-of-the-valley and woodland strawberry.
Clearings are common on steep south-facing slopes. Shrubs on these slopes - rose, saskatoon berry, snowberry spreading dogbane, choke cherry - are generally stunted. Grasses are abundant, and include bearded wheat grass, northern awnless brome, hairy wild rye, June grass and porcupine grass.
Characteristic herbs are sagewort, smooth aster, goldenrod, northern bedstraw, bluebell, common yarrow, Pennsylvanian cinquefoil, and blue-eyed grass. In recent slump sites 4 species of sage, 2 species of wheat grass, showy locoweed and goldenrod are the chief colonizers.

The mixedwoods on the lower sections of the slump areas harbor hairy woodpeckers, yellow-bellied sapsuckers, Swainson's thrushes, western wood peewees and yellow-rumped warblers. The aspen woods on the valley slopes also provide habitat for ruffed grouse, blue jays, oven birds and American redstarts. The large mammals of the park - black bear, moose, mule deer, wolves - range through the area.

Linear Wetland

The linear wetland is an abandoned drainage channel of post-glacial times. Beaver dams have created an assemblage of swamp, fen and bog wetlands here.

Swamps are defined as wooded wetlands where standing to gently flowing water occurs seasonally or persists for long periods on the surface. Vegetation in these swamps is tall willows with an understory of mosses, sedges and marsh reed grass. Scattered shrubs and herbs characteristic of this community type are skunk currant, wild black currant, marsh marigold, tufted loosestrife, and common skullcap.

Fens are peatlands which can be treed, shrubby or open. Water source is mineral rich ground water (alkaline), with slow internal drainage. These fens are hummocky with a thick mat of mosses and sedges. Characteristic herbs include marsh cinquefoil, dwarf raspberry and bedstraw. Predominant shrubs include swamp birch, bog willow, and flat-leaved willow.

Bogs are peatlands of standing water, fairly acidic because rainwater maintains the water table. A portion of the wetlands in this area take on the characteristics of a bog as the hummocks are covered with sphagnum mosses and shrubs such as Labrador tea and bog cranberry.

Scattered dry islands within the wetland support tall spruce and tamarack. Understory is northern green orchid, blunt-leaved orchid, and feathermosses and horsetails.

The wetlands provide habitat for an abundance of aquatic insects, wood frogs and boreal chorus frogs. Birds present include red-winged blackbird, rusty blackbird, Tennessee warbler, black and white warbler, yellowthroat, Lincoln's sparrow and swamp sparrow, common snipe, olive-sided flycatchers, boreal chickadees, ruby-crowned kinglets and red crossbills. Moose browse the willows, and beaver are present.

Uplands

Upland areas in the park are those lands to the west of the Peace River which are above the terraces and the slump slopes. This area is covered with ground moraine, and is subdivided into poorly-drained and well-drained uplands.

Poorly-drained Uplands

Basically, the poorly drained uplands contain a higher percentage of fine ground moraine materials; more than 50% of it is wetlands. It comprises most of the uplands in the park.

In the drier sections, of these poorly-drained uplands aspen woods, spruce woods and mixed aspen and spruce woods predominate. The wetter depression areas are marshes, swamps and bogs, where black spruce, tamarack and willows are present.

Crummy Lake is the largest depression in this unit, and is the only extensive body of open water. This shallow lake is ringed with floating moss mats, patches of cattails and northern reed grass. Farther inshore are herbs such as marsh cinquefoil, common skullcap, fleshy stitchwort, and water parsnip, and bog birch and willows. Surrounding Crummy Lake are extensive black spruce bogs. Typical understory vegetation is sphagnum moss with white patches of lichen, cotton grass, three-leaved Solomon's seal, Labrador tea, cloudberry, bog cranberry and small bog cranberry, and blueberry.

Many other depressions in this unit support marshes, grassy wet areas which are periodically inundated with water up to a depth of 2 meters. Characteristic vegetation in these areas is tall sedges, northern reed grass, skullcap, yellow avens, stinging nettle and water parsnip. Less moist depressions support thickets of river alder and balsam poplar. The understory under the dense canopy in these thickets is sparse, consisting of wild sarsaparilla, tall mertensia, palmate-leaved coltsfoot and low-bush cranberry. Occasionally communities of white spruce encircle the thickets - they have escaped burning in recent fires.

Aspen woods cover the largest area in this unit. The composition of these woods varies with age of stand (directly related to fire history) and drainage. Recently burned stands have a characteristic understory of rose, hairy wild rye, fireweed, peavine and showy aster. Older stands typically have some young white spruce, a sparse tall shrub layer of beaked willow, a moderately dense shrub layer of rose, prickly red raspberry, snowberry and low-bush cranberry, and a moderately dense herb layer of hairy wild rye, fringed brome, showy aster, sunning raspberry, wild lily-of-the-valley, wild sarsaparilla and wild strawberry.

Crummy Lake was dry in the late 1950s and was homesteaded, but since then it has become too wet for agricultural purposes and the land reverted to the crown. It supports an abundance of waterfowl including mallard, gadwall, America widgeon, blue-winged teal, ring-necked duck, common goldeneye, ruddy duck, and American coot. Other marsh birds include sora and long-billed marsh wren. Birds present in the wetlands include Say's phoebe, alder flycatcher, cedar waxwing, yellow warbler, rusty blackbird, fox sparrow, Lincoln's sparrow and swamp sparrow. The black spruce bogs have a lower diversity of fauna - the olive-sided flycatcher is characteristic. The aspen woods supports ruffed grouse, least flycatcher, western wood peewee, black-capped chickadee, red-eyed vireo, ovenbird and white-throated sparrow. Mule deer favor the more open deciduous areas over denser coniferous stands, and marten, fisher and weasel probably range throughout.

Well-drained Uplands

This is a small unit of land between the Peace and Notikewin Rivers above the northern terrace complex. It is covered with a fairly homogeneous middle-aged aspen forest community. Understory consists of a dense shrub layer of buffaloberry, rose, lowbush-cranberry, snowberry and dogwood, and a thin herb layer of fireweed, northern bedstraw, bunchberry, twin flower, showy aster, wild sarsaparilla, wild lily-of-the-valley and tall mertensia. This area was probably burned in the early 1900s.

Birds of the upland aspen woods are ruffed grouse, least flycatcher, black-capped chickadee, house wren, robin, red-eyed vireo, dark-eyed junco and white-throated sparrow. Mule deer browse the open aspen woods.

Appendix B Summary of Public Input

At the beginning of the planning process, the public was asked for input through questionnaires and through letters sent to stakeholders. Forty questionnaires and 11 letters were returned. The following is a summary of this input, organized under the following headings.

Roads

- For many people the distance of the park from the highway is a deterrent for visiting the park.
- The secondary road to the park is not completely paved; and the secondary road to the south end is not paved at all. This deters those with trailers, etc. who prefer to travel on pavement.
- Many people feel the gravel access road down to the river is not reliable in wet weather. People are afraid to take campers, RVs down to the river for fear of not being able to get back up should there be rain.
- Most visitors are day visitors. Some are worried about camping overnight because of bears.

Facilities

- Facilities such as hot showers, heated washroom buildings, sewer hookups, electrical hookups, on average were not as important to visitors as access to cold running water and dry split firewood. The most important attributes of the park were the wilderness setting, the quiet and feeling of privacy, access to river, and the opportunity for outdoor activities.
- A boat launch was important in order to access the Peace River for boating and fishing.
- Some suggested developing facilities at the south end of the park; others suggested that the south end remain undeveloped.

Heritage Appreciation Services

- Most respondents were interested in some interpretation or environmental education services, perhaps only occasionally. Interpretative trails interested the majority of people, followed by children's programs. However, others wondered if the expense of these services was worth it, or even necessary.

Protection

- Most respondents agreed that a main objective of the park should be protection of its natural environment, but this should be balanced with opportunities for visitor use. Some felt that the wilderness setting of the park was its most important feature, while others felt it was useless as a park because of its low visitation.

- Most felt that forest fires should not be allowed to burn freely. Controlled fire was an acceptable way to manage the forest.
- The number of people who agreed and disagreed that insect infestations should be allowed to run their course were equal, as was the number who agreed and disagreed about the use of pesticides, tree removal, etc. to manage these infestations.
- Most people felt that the presence of wildlife in the park is a sign of the quality of the natural environment.
- Most also felt that the park is being protected successfully for the future.

Promotion of the Park

- Many people felt the park was not promoted enough, and that more local/regional/provincial promotion could possibly increase use of the park. There were others who felt that the distance from the highway, the rustic facilities, and the gravel roads were deterrents to visitors, and tourism to the area would be difficult to increase.
- To increase interest among local people, special events and holding local functions at the park were suggested.

Appendix C Management Issues

The following chart lists issues raised by the public during the public participation process and indicates where in the plan they are addressed. Often the issues are mentioned in several places, but the reference given is the main one:

Issues	Where it is addressed in management plan
Backcountry facilities	5.3 Outdoor Recreation. Page 16
Bear management	5.1 Preservation. Page 12
Berry picking	5.3 Outdoor Recreation. Page 16
Boat launch	5.3 Outdoor Recreation. Page 16
Community involvement/stewardship in park	5.3 Outdoor Recreation Page 16 7.2 Local Community. Page 20
Entrepreneurial activities in park	5.3 Outdoor Recreation. Page 16 5.4.Heritage Tourism. Page 18.
Forest management - fire management - use of pesticides	5.1 Preservation. Page 12
Information about the park	5.2 Heritage Appreciation Page 15 5.4 Heritage Tourism. Page 18
Interpretation/information services	5.2 Heritage Appreciation. Page 15
Main objectives of park	5.1 Preservation. Page 12 5.2 Heritage Appreciation. Page 15 5.3 Outdoor Recreation Page 16 5.4 Heritage Tourism. Page 18
Maintaining the natural environment of park	5.1. Preservation Page 12
Resource extraction	6.2 Dispositions. Page 19
Roads in the park	5.39 Outdoor Recreation. Page 16
Signs in park, on way to park	5.2 Heritage Appreciation. Page 15
Tourism promotion of park	5.4 Heritage Tourism Page 18

Appendix D Plants found in Notikewin Provincial Park

This list of vascular plants was compiled from: Mueller, Bradley and Brown 1973 *Proposed Notikewin Park, Ecological Survey and Analysis for Park Development.* This list has since been added to by park staff.
Other references were:
E.H. Moss 1959 *Flora of Alberta.* University of Toronto Press
Budd, A.C. 1957 *Wild Plants of the Canadian Prairies.* Canada Dept. Agriculture
D. Johnson, L. Kershaw, A. MacKinnon and J. Pojar. 1995 *Plants of the Western Boreal Forest and Aspen Parkland.* Lone Pine Press.

Trees	
Balsam fir	*Abies balsamea.*
White birch	*Betula papyrifera*
Tamarack	*Larix laricina*
White Spruce	*Picea glauca*
Black spruce	*Picea mariana*
Jack pine	*Pinus banksiana*
Lodgepole pine	*Pinus contorta*
Balsam poplar	*Populus balsamifera*
Black poplar	*Populus trichocarpa*
Aspen	*Populus tremuloides*
Tall Shrubs	
Green alder	*Alnus crispa*
River alder	*Alnus tenufolia*
Saskatoon berry	*Amelanchier alnifolia.*
Pin cherry	*Prunus pensylvanica*
Peach-leaf willow	*Salix amygdaloides*
Beaked willow	*Salix bebbiana.*
Hoary willow	*Salix candida*
Pussy willow	*Salix discolor.*
Sandbar willow	*Salix interior*
Yellow willow	*Salix lutea*
Velvet-fruited willow, also MacCall's willow	*Salix maccalliana*
Mackenzie's willow	*Salix mackenzieana, also Salix rigida*
Basket willow	*Salix petiolaris*
Flat-leaved willow	*Salix planifolia*
Autumn willow	*Salix serissima*
	Salix spp.
High-bush cranberry	*Viburnum trilobum*
Medium Shrubs	
Swamp birch	*Betula pumila*
Red osier dogwood	*Cornus stolonifera*
Beaked hazelnut	*Corylus cornuta*
Silverberry, also Wolf-willow	*Elaeagnus commutata*
Labrador tea	*Ledum groenlandicum Oeder*

Twining honeysuckle	*Lonicera dioica* var. *glaucescens*
Bracted honeysuckle	*Lonicera involucrata*
Chokecherry	*Prunus virginiana*
Skunk currant	*Ribes glandulosum*
Northern gooseberry	*Ribes hirtellum.*
Northern black currant	*Ribes hudsonianum*
Briskly black currant	*Ribes lacustre*
Wild red currant	*Ribes triste*
	Ribes sp.
Prickly rose	*Rosa acicularis.*
Low prairie rose	*Rosa arkansana*
Common wild rose	*Rosa woodsii*
Wild red raspberry	*Rubus strigosus*
Myrtle leaved willow	*Salix myrtillifolia*
Bog willow	*Salix pedicellaris*
Canada buffaloberry	*Shepherdia canadensis*
Buckbrush	*Symphoricarpos occidentalis*
Snowberry	*Symphoricarpos albus*
Common blueberry	*Vaccinium myrtilloides*
Low bush cranberry	*Viburnum edule.*
Low Shrubs	
Common bearberry	*Arctostaphylos uva-ursi*
Creeping juniper	*Juniperus horizontalis*
Small bog cranberry	*Oxycoccos microcarpus*
Dwarf raspberry	*Rubus acaulis*
Cloudberry	*Rubus chamaemorus*
Dewberry	*Rubus pubescens*
Dwarf bilberry	*Vaccinium caespitosum*
Bog cranberry	*Vaccinium vitis-idaea*
Ferns	
Male fern	*Dryopteris filix-mas*
Narrow spinulose shield fern	*Dryopteris spinulosa*
Ostrich fern	*Matteucia struthiopteris*
Horsetails	
Common horsetail	*Equisetum arvense*
Swamp horsetail	*Equisetum fluviatile*
Common scouring-rush	*Equisetum hyemale*

Common scouring-rush	*Equisetum hyemale*
Smooth scouring-rush	*Equisetum laevigatum*
Marsh horsetail	*Equisetum palustre*
Meadow horsetail	*Equisetum pratense*
Dwarf scouring rush	*Equisetum scirpoides*
Variegated horsetail	*Equisetum variegatum*
Club mosses	
Ground cedar	*Lycopodium complanatum*
Little club moss	*Selaginella densa*
Grasses, Sedges and Rushes	
Slender-wheat grass	*Agropyron canlinum (L.) Beauv.*
Beardless wheat grass	*Agropyron inerme*
Quack grass	*Agropyron repens*
Bearded wheat grass	*Agropyron subsecundum*
Slender wheat grass	*Agropyron trachycaulum*
Hair grass	*Agrostis scabra*
Slough grass	*Beckmannia syzigachne*
Fringed brome	*Bromus ciliatus*
Awnless brome	*Bromus inermis*
Northern awnless brome	*Bromus pumpellianus*
Marsh reed grass	*Calamagrostis canadensis*
Northern reed grass	*Calamagrostis inexpansa*
Narrow reed grass	*Calamagrostis neglecta*
Pine grass	*Calamagrostis rubescens*
Water sedge	*Carex aquatilis*
Awned sedge	*Carex atherodes*
Golden sedge	*Carex aurea*
Brownish sedge	*Carex brunnescens*
Hair-like sedge	*Carex capillaris*
Two-stamened sedge, also lesser panicled sedge	*Carex diandra*
Two-seeded sedge	*Carex disperma*
Hay sedge	*Carex foenea*
Northern bog sedge, also yellow bog sedge	*Carex gynocrates*
Beaked sedge	*Carex rostrata*
Broom sedge	*Carex scoparia*
	Carex spp.
Tufted hair grass	*Deschampsia caespitosa*
Creeping spike-rush	*Eleocharis palustris*
Canada wild rye	*Elymus canadensis*
Hairy wild rye	*Elymus innovatus*
One-spike cotton-grass	*Eriophorum scheuchzeri*
Sheathed cotton-grass	*Eriophorum vaginatum*
Sweet grass	*Hierochloe odorata*
Foxtail barley	*Hordeum jubatum*
Alpine rush	*Juncus alpinus*
Wire rush	*Juncus balficus*
Toad rush	*Juncus bufonius*

White-grained mountain rice grass	*Oryzopsis asperifolia*
Northern rice grass	*Oryzopsis pungens*
Reed canary grass	*Phalaris arundinacea*
Common reed grass	*Phragmites communis*
Timothy	*Phleum pratense*
Inland bluegrass	*Poa interior*
Kentucky bluegrass	*Poa pratensis*
Fowl bluegrass	*Poa palustris*
	Poa sp.
False melic	*Schizachne purpurascens*
Three-square rush	*Scripus americanus*
Small-fruited bulrush	*Scirpus microcarpus*
Common great bulrush	*Scirpus validus*
Porcupine grass	*Stipa spartea*
Arrow grass	*Triglochin maritima*
Water Plants	
Mares tail	*Hippuris vlugaris*
Common duckweed	*Lemna minor*
	Lemna sp.
Water smartweed	*Polygonum amphibium*
Long-spiked water smartweed	*Polygonum coccineum*
Common cattail	*Typha latifolia*
Forbs	
Common yarrow	*Achillea millefolium .*
Many-flowered yarrow	*Achillea sibirica*
Baneberry	*Actaea rubra.*
Nodding onion	*Allium cernum*
Fairy candelabra	*Androsace septentriorolis*
Canada anemone	*Anemone canadensis*
Cut-leaved anenome	*Anenome multifida*
Prairie crocus	*Anenome patens*
Broad-leaved pussytoes	*Antennaria neglecta.*
Small-leaved pussytoes	*Antennaria nitida*
Spreading dogbane	*Apocyunum androsaemifolium*
Indian hemp	*Apocynum cannabinum*
Blue columbine	*Aquilegia brevistyla*
Hairy rock cress	*Arabis hirsuta*
Wild sarsparilla	*Aralia nudicaulis*
Blunt-leaved sandwort	*Arenaria lateriflora*
Sandwort	*Arenaria sp.*
Blunt-leaved sandwort	*Arenaria lateriflora*
Biennial sagewort	*Artemesia biennis*
Plains wormwood	*Artemesia campestris*
Dragonwort	*Artemesia dracunculus*
Pasture sagewort	*Artemesia frigida*
Herriot's sage	*Artemesia herriotii*

Long-leaved sage	*Artemesia longifolia*
	Artemesia sp.
Lindley's aster	*Aster ciliolatus.*
Showy aster	*Aster conspicuus.*
Tufted white prairie aster	*Aster ericoides L. var. commutatus,* also *Aster pansus*
Western willow aster	*Aster hesperius.*
Rush aster	*Aster junciformis*
Smooth aster	*Aster laevis var. geyri.*
Purple-stemmed aster	*Aster puniceus.*
Arctic aster	*Aster sibiricus*
	Aster subspicatus Nees Var. subspicatus
American milk vetch	*Astragalus frigidus var. americanus.*
Loose-flowered milk vetch	*Astragalus tenellus*
	Astragalus sp.
Nodding beggarticks	*Bidens cernua*
Bird-rape	*Brassica campestris*
Yellow marsh marigold	*Caltha palustris*
Common harebell	*Campanula rotundiflolia*
Shepherd's purse	*Capsella bursa-pastoris*
Purple Indian paint-brush	*Castilleja raupii*
Indian paint-brush	*Castilleja sp.*
Mouse-eared chickweed	*Cerastium arvense*
Lamb's quarters	*Chenopodium album*
Strawberry blite	*Chenopodium capitatun*
Oak-leaved goosefoot	*Chenopodium glaucum*
Narrow-leaved goosefoot	*Chenopodium leptophyllum*
Water-hemlock	*Cicuta douglasii*
Enchanter's nightshade	*Circaea alpina*
Blue clematis	*Clematis verticellaris var. columbiana*
Northern bastard toad-flax, also Northern comandra	*Comandra livida, also Geocaulon livedum*
Bastard toad-flax, also pale comandra	*Comandra pallida*
Bunchberry	*Cornus canadensis L.*
Golden corydalis	*Corydalis aurea*
Scapose hawksbeard	*Crepis runcinata*
Annual hawksbeard	*Crepis tectorum*
Sparrow's egg lady slipper	*Cypripedium passerinum*
Tall larkspur	*Delphinium glacum*
Tansy mustard	*Descurainia sophia*
Fairy bells	*Disporum trachycarpum*
Fireweed	*Epilobium angustifolium*

Northern willowherb	*Epilobium glandulosum*
Northern daisy fleabane, also bitter fleabane	*Erigeron acris*
Horseweed	*Erigeron canadensis*
Smooth fleabane	*Erigeron glabellus*
Philadelphia fleabane	*Erigeron philadelphicus*
	Erigeron pumilus
Wormseed mustard	*Erysimum cheiranthoides*
Small-flowered rocket	*Erysimum inconspicuum*
Joe-pye weed	*Eupatorium purpureum var. maculatum*
Wild strawberry	*Fragaria glauca Var. virginiana*
Woodland strawberry	*Fragaria vesca*
Wild strawberry	*Fragaria virginiana*
Hemp nettle	*Galeopsis tetrahit*
Northern bedstraw	*Galium boreale*
Labrador bedstraw	*Galium labradoricum*
Small bedstraw	*Galim trifidum*
Sweet-scented bedstraw	*Galium triflorum*
Felwort	*Gentianella amarella*
Bicknell's geranium	*Geranium bicknellii*
Yellow avens	*Geum allepicum*
Low cudweed	*Gnaphalium uligonosum*
Lesser rattlesnake-plantain	*Goodyera repens*
Northern green orchid	*Habenaria hyperborea*
Blunt-leaved orchid	*Habenaria obtusata*
Bracted orchid	*Habenaria viridis*
Northern hedysarum	*Hedysarum boreale*
Alpine hedysarum	*Hedysarum alpinum*
Canada hawkweed	*Hieracium canadense*
Narrow-leaved hawkweed	*Hieracium umbellatum*
Common blue lettuce	*Lactuca pulchella*
Yellow pea-vine	*Lathyrus ochroleucus*
Purple pea-vine	*Lathyrus venosus var. intonsus*
Western wood lily	*Lilium philadelphicum*
Twin flower	*Linnaea borealis*
Northern twayblade	*Listera borealis*
Heart-leaved twayblade	*Listera cordata*
Tufted loosestrife	*Lysimachia thyrsifolia*
Wild lily-of-the-valley	*Maianthemum canadense*
Alfalfa	*Medicago safiva*
Cow-wheat	*Melampyrum lineare*
White sweet clover	*Melilotus alba*
Yellow sweet clover	*Melilotus officianalis*
Wild mint	*Menta arvensis*
Tall mertensia	*Mertensia paniculata*
Bishop's cap	*Mitella nuda*
One-flowered wintergreen	*Moneses unifolra*

Plains muhly	*Muhlenbergia cuspidata*
Bog muhly	*Muhlenbergia glomerata*
Yellow evening primrose	*Oenothera biennis*
Round-leaved orchid	*Orchis rotundifolia*
Reflexed loco-weed	*Oxytropis deflexa*
Showy loco-weed	*Oxytropis splendens*
Grass-of-Parnassus	*Parnassia palustris*
Labrador lousewort	*Pedicularis labradorica*
Lilac-flowered beard-tongue	*Pentstemon gracilis*
Palmate-leaved coltsfoot	*Petasites palmatus*
Arrow-leaved coltsfoot	*Petasites sagittatus*
Vine-leaved coltsfoot	*Petasites vitifolius*
Common plaintain	*Plantago major*
Common knotweed	*Polygonum aviculare*
Lady's thumb	*Polygonum persicaria*
Silverweed	*Potentilla anserina*
Rough cinquefoil	*Potentilla norvegica*
Marsh cinquefoil	*Potentilla palustris*
Prairie cinquefoil	*Potentilla pensylvanica*
Brook cinquefoil	*Potentilla rivalus*
	Potentilla sp.
Common pink wintergreen	*Pyrola asarifolia*
White wintergreen	*Pyrola elliptica*
Lesser wintergreen	*Pyrola minor*
One-sided wintergreen	*Pyrola secunda*
Greenish-flowered wintergreen	*Pyrola virens*
Shore buttercup	*Ranunculus cymbalarias*
Yellow water crowfoot	*Ranunculus gmelinii*
Lapland buttercup	*Ranunculus lapponicus*
Macoun's buttercup	*Ranunculus macounii*
Celery-leaved buttecup	*Ranunculus sceleratus*
Yellow cress	*Rorippa islandica*
Golden dock	*Rumex maritimus*
Narrow-leaved dock	*Rumex mexicanus*
Western dock	*Rumex occidentalis*
Marsh ragwort	*Senecio congestus*
Rayless ragwort	*Senecio indecorus*
Balsam groundsel	*Senecio pauperculus*
Common groundsel	*Senecio vulgaris*
Tall hedge mustard	*Sisymbrium loeselii*
Common blue-eyed grass	*Sisyrinchium montanum*
Water parsnip	*Sium suave*
False Solomon's seal	*Smilacina racemosa*
Star-flowered Solomon's seal	*Smilacina stellata*
Three-leaved Solomon's seal	*Smilacina trifolia*
Goldenrod	*Solidago gigantea*
Goldenrod	*Solidago missouriensis*
Smooth perennial sow thistle	*Sonchus arvensis*
Prickly sow thistle	*Sonchus asper*
Perennial sow thistle	*Sonchus uliginasus*
	Sonchus sp.
Ladies tresses	*Spiranthes romanzoffiana*
Hedge nettle	*Stachys palustris*
Fleshy stitchwort	*Stellaria crassifolia*
Long-leaved chickweed	*Stellaria longifolia*
Long-stalked chickweed	*Stellaria longipes*
Common dandelion	*Taraxacum officinale*
Veiny meadow rue	*Thalictrum venulosum*
Northern starflower	*Trientalis borealis*
Starflower	*Trientalis europaea*
Common nettle	*Urtica gracilis*
American brooklime	*Veronica americana*
Hairy speedwell	*Veronica peregrina*
American vetch	*Vicia americana*
	Vicia sp.
Early blue violet	*Viola adunca*
Bog violet	*Viola nephrophila*
Marsh violet	*Viola palustris*
Western Canada violet	*Viola rugulosa*
Mosses	
	Aulacomnium sp.
Wavy dicranum	*Dicranum undulatum*
	Drepanocladus hypnum
	Drepanocladus sp.
Stair-step moss	*Hylocomium splendens*
	Plagiomnium sp.
Red-stemmed feather moss	*Pleurozium schreberi*
Juniper hair-cap moss	*Polytrichum juniperinum*
Knight's plum heather moss	*Ptilium crista-castrensis*
	Tomenthypnum sp.
Lichens	
	Alectoria sp
Powdered sunshine	*Cetraria pinastri*
	Cetraria sp
Raindeer lichen	*Cladina sp*
	Cladonia alpestris
Horn cladonia	Cladonia cornuta
Deformed cup	*Cladonia deformis*
Brown-foot cladonia	*Cladonia gracilis*
Whorled cup lichen	*Cladonia verticillata*
False pixie-cup	*Cladonia chlorophaea*
	Parmelia sp.
Freckle pelt	*Peltigera aphthosa*
Frog pelt	*Peltigera polydactyla*

Rough pelt	*Peltigera scabrosa*
	Ramalina sp.
	Stereocaulon sp.
	Usnea sp
Miscellaneous	

False morel	
True morel	*Morchella sp*
Filamentous algae	
Bear's head fungus	*Hydnum sp*

Rare Plants in the Park

Below is a table of rare plant species which have been identified in the park. These species are identified as rare and ranked by the Alberta Natural Heritage Inventory Center (ANHIC Plant Species of Special Concern July 1998). Rankings are S=Alberta ranking, G=global ranking.

G1 S1 - 5 or less occurrences or only a few remaining individuals

G2 S2 - 6-20 occurrences or with many individuals in fewer occurrences

G3 S3 - 21-100 occurrences, may be rare and local throughout its range, or in a restricted range

G4 S4 - apparently secure under present conditions, typically less than 100 occurrences but may be fewer with many large populations, may be rare in parts of its range, especially peripherally.

G5 S5 - Demonstrably secure under present conditions, more than 100 occurrences, may be rare in parts of its range, especially peripherally.

GU SU - Status uncertain often because of low search effort or cryptic nature of the element, possibly in peril, unrankable, more information needed..

Common Name	Latin Name	Rarity	General Location
Beaked sedge	Carex rostrata	S2, G5	Wetlands
Broom sedge	Carex scoparia	S1, G5	Moist grounds
Narrow-leaved goosefoot	Chenopodium leptophyllum	SU, G5	Dry ground, often sandy areas
One-spike cotton grass	Eriophorum scheuchzeri	S2S3, G5	Boggy ground